The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEPHEN FRANCIS BUSH
and JOHN ERIK HERSHEY

Appeal 2007-0015
Application 09/697,562[1]
Technology Center 2100

Decided: March 26, 2007

Before LEE E. BARRETT, ALLEN R. MacDONALD, and JEAN R. HOMERE, *Administrative Patent Judges.*

BARRETT, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1-14.

We reverse.

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[1] Application for patent filed October 26, 2000, entitled "Communications Network for Dynamic Reprioritization," which claims the benefit of Provisional Application 60/162,901, filed November 1, 1999.

BACKGROUND

The invention relates to active network management which determines a merit value for received messages and dynamically reprioritizes the received messages for relay based upon the merit value.

Claim 1 is reproduced below.

1. A communications network, comprising:

at least one source unit configured to generate messages for relay;

a smart node capable of storing programming instructions, receiving messages for relay from said source unit, determining at least a merit value for said received messages, dynamically reprioritizing the received messages for relay based upon said merit value, and transmitting the reprioritized received messages; and

at least one portal node adapted to receive said reprioritized received messages transmitted from said smart node.

THE REFERENCES

The Examiner relies on the following references:

Tonchev	6,324,570 B1	Nov. 27, 2001 (filed Feb. 25, 1997)
Aimoto	6,570,876 B1	May 27, 2003 (filed Mar. 30, 1999)

THE REJECTIONS

Claims 1-6, 9, and 11-14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Aimoto.

Claims 7, 8, and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Aimoto and Tonchev.

The final rejection of claim 10 under 35 U.S.C. § 112, second paragraph, has been overcome by amendment.

DISCUSSION

The issues

The issues are whether Aimoto teaches: (1) assigning a merit value to messages; and (2) dynamically reprioritizing messages based upon the merit value. These limitations are found in all independent claims 1, 4, and 9.

Arguments

Appellants argue that Aimoto does not teach the two limitations noted in the statement of the Issues. Appellants argue that Aimoto does not teach the communications network of claim 1 because the "merit value" in claim 1 is different from the "priority value" in Aimoto (Br. 7). In particular, it is argued that the communications network of the invention has a smart node that receives messages and "then determines a merit value for each of the received messages and dynamically reprioritizes the received messages based on the determined merit values" (Br. 7); i.e., it "determines a merit value dynamically" (Br. 7). It is argued

that Aimoto controls transmission of packets according to priority information already contained in the packets (Br. 8).

The Examiner responds that (Answer 13 and 16):

> Aimoto discloses determining priority value as merit value in the header of the packet [see Aimoto, Fig. 3 and Col. 5, Lines 42-58]. Also, Aimoto further teaches dynamically reprioritizing the received messages for relay based upon said merit value. That is, the transmission priority control unit (5) performs storing packets received from the relaying unit in a transmission buffer memory (83) and classifying packets into a plurality of groups and queuing those packets according to the priority for each group [see Aimoto, Col. 6, Lines 1-10 and Col. 6, Lines 15-22].

Appellants reply that while Aimoto does discuss a "relaying priority," this does not appear to be anything similar to a "merit value" (Reply Br. 2). It is argued that the relaying priority is not a merit value, but appears simply to be a priority that is established by Aimoto's transmission priority control unit 5 when messages are received, based on information in the message data string (Reply Br. 2). Appellants argue that, at best, Aimoto teaches *prioritization*, but no *reprioritization* is performed by the control unit because once Aimoto establishes a prioritization, this prioritization is never changed (Reply Br. 3). It is argued that even the prioritization is not based upon any parameter such as a merit value, as claimed, and the relaying priority in Aimoto is never used for reprioritization (Reply Br. 3).

Content of Aimoto

Aimoto relates to a method for switching variable length packets according to their priority and transmitting variable length packets by controlling a bandwidth thereof (col. 1, ll. 8-15). Aimoto has a packet switch 1 comprising a plurality of

control boards 10-1 to 10-L, a packet relaying unit 4 for relaying packets between those control boards 10, and a management unit 9 connected to each of the control boards 10, where each control board comprises an input port interface 20 and an output port interface 21 (Figure 1; col. 5, ll. 16-22).

In the input port interface 20, "the relaying priority control unit 3 determines a relaying priority based on the management information (packet priority information, protocol information, network address, etc., which will be described later with reference to FIG. 3) and stores the received packet in a queue Qi corresponding to the determined relaying priority" (col. 5, ll. 50-56) and "packets are read out by the packet read-out circuit 71 sequentially from the queues formed in the receiving buffer memory 72 according to the order of descending priority, then output to the packet relaying unit 4" (col. 5, ll. 59-63).

In the output port interface 21, "the transmission priority control unit 5 forms a multidimensional queue structure in the transmission buffer 83 by classifying transmission packets into a plurality of groups base[d] on the header information of each of those packets and queuing those transmission packets according to the transmission priority for each group" (col. 6, ll. 4-10). There are j queue groups 83-1 to 83-j (Figure 1), each of which have a plurality of queues (e.g., Qi0 to Qi7 in queue group 83-i in Figure 6 or Q10 to Q1n in queue group 83-1 in Figure 1) corresponding to the transmission priority in the mapping table 40. Packets are queued and transmitted according to a communication service contract which guarantees a certain bandwidth (col. 6, ll. 47-58). A packet 30 shown in Figure 3 comprises a header which includes packet priority information 33 indicating the processing priority of the packet (col. 8, ll. 26-31).

Transmission priorities among a plurality of packet flows transmitted under different service contracts are determined by a mapping table 40 (Figure 4), "wherein a value is assigned to indicate the transmission priority corresponding to each combination of the priority information 33 and the protocol 35" (col. 9, ll. 5-7); e.g., a value 0 to 7 is assigned to put the packet in one of the priority queues of a contract queue 83-i (Figure 6). A mapping table 50 (Figure 5) specifies a queue group 83-1 to 83-j corresponding to the contract for a source address and a destination address (col. 9, ll. 34-48). Thus, the transmission priority is *fixed* based on the packet priority information 33, protocol 35, source address 36, and destination address 37 in the packet header in Figure 3.

Analysis

The first issue is whether Aimoto discloses assigning a merit value to received messages. The Examiner finds that the "priority value" in Aimoto corresponds to the "merit value," but does not address Appellants' arguments that they are not the same thing. First, we must interpret "merit value."

The Specification discloses Position Dilution of Precision (PDOP) as an example of a merit value (page 5), but the claims are not limited to PDOP and the term "merit value" is not defined. "Merit" is defined, *inter alia*, as "a praiseworthy quality: VIRTUE," *Webster's New Collegiate Dictionary* (G.&C. Merriam Co. 1977). It is not clear that "merit value" has to be computed from the message contents, as with PDOP, or could be based on something else about the packet that carries the message. Nevertheless, "merit value" implies a value based on some quality of the received message, either of the message content or the packet which

carries the message, and "determining at least a merit value" implies that the merit value is computed and not just fixed in the incoming message.

"Determines a relaying priority" in Aimoto sounds somewhat like the claimed "determining at least a merit value" inasmuch as something is determined. However, it does not appear that the relaying priority is based on any "merit" or quality of the packet. Aimoto states that control unit 3, which is in the input port interface 20, "determines a relaying priority based on the management information (packet priority information, protocol information, network address, etc. . . .)" (col. 5, ll. 51-54), but never actually discloses how it is determined. Aimoto only describes how the transmission priority in output interface port 21 is determined with respect to Figure 3. The transmission priority is determined based on the packet priority information 33 and the protocol information 35 in Figure 3 using the mapping table 40 in Figure 4, and the source address 36 and destination address 37 in Figure 3 using the mapping table 50 in Figure 5. No figure of merit is computed since the priority is predetermined from the information in the packet header of Figure 3 using the mapping table. Nevertheless, since the definition of "merit" is not totally clear, we do not rest our decision only on this finding.

The second issue is whether Aimoto discloses reprioritizing messages based upon the determined merit value. The transmission priority in Aimoto is determined based on the packet priority information 33, the protocol information 35, the source address 36, and destination address 37 in the packet header of Figure 3, using mapping table 40 in Figure 4 and mapping table 50 in Figure 5. We assume, for purposes of discussing this limitation, that the "transmission priority" is a "merit value." Aimoto puts packets in specific queues

to implement transmission which guarantees the bandwidth assigned to the queue group. The transmission priority is *not changed* from the priority of the incoming packet, which is *fixed* by the header information, i.e., Aimoto does not "dynamically reprioritize" the packets based on the merit value. The Examiner's rejection does not explain how the packets come into the switch in Aimoto with one priority and are reprioritized into another priority based on a merit value. Therefore, even if Aimoto discloses determining a merit value, which it does not, Aimoto does not disclose reprioritizing the messages based on the merit value.

For the reasons stated above, the rejection of independent claims 1, 4, and 9, and their dependent claims 2, 3, 5, 6, and 11-14 is reversed. Tonchev is applied to the rejection of claims 7, 8, and 10 for its teaching of a prioritization heuristic. Tonchev does not cure the deficiencies of Aimoto with respect to the independent claims from which they depend and, so, the rejection of claims 7, 8, and 10 is also reversed.

REVERSED

tdl/gw

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